SECTION 08410

ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aluminum doors and frames

B. Vision glass

C. Door hardware

D. Perimeter sealant

1.2 SYSTEM DESCRIPTION

A. Aluminum entrances and storefront system includes tubular aluminum sections [with supplementary internal support framing], shop fabricated, factory finished; vision glass; related flashings, anchorage and attachment devices, and sealant.

1.3 PERFORMANCE REQUIREMENTS

A. Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall, to a design pressure of 22 psf measured in accordance with ASTM E330.

B. Limit mullion deflection to flexure limit of specified glass, with full recovery of glazing materials.

C. Accommodate, without damage to components or deterioration of seals, movement between system and peripheral construction, dynamic loading and release of loads, and deflection of structural support framing.

D. Limit air infiltration through assembly to 0.10 cfm, measured at a reference differential pressure across assembly of 6.24 psf as measured in accordance with ASTM 283.

E. Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.

F. Eliminate water leakage when tested in accordance with ASTM E331 with a test pressure of up to 12 psf.

G. Provide for expansion and contraction within system components caused by cycling temperature range of 70 degrees F over a 12 hour period without causing detrimental effect to system components and anchorage.

H. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.

1.4 SUBMITTALS

A. Submit the following in accordance with requirements of Section 01300.

1. Catalog data indicating component dimensions, describing components within assembly, anchorage and fasteners, glass, door hardware, and internal drainage details.

2. Calculations or load tables indicating framing member structural and physical characteristics and dimensional limitations.

3. Shop drawings indicating system dimensions, framed opening requirements and tolerances, affected related work and expansion and construction joint locations and details.

4. Two samples of at least 6 square inches of aluminum material finish.

5. Manufacturer's warranty and ensure forms have been completed in Owner's name and registered with the manufacturer.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with AAMA SFM-1 and AAMA Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.

B. Conform to requirements of ANSI A117.1.

C. Use products of a company specializing in manufacturing aluminum glazing systems with minimum of 10 successfully completed projects of similar size and scope as this project.

[D. Use a Professional Structural Engineer to design supplementary framing components.]

1.6 ENVIRONMENTAL REQUIREMENTS

A. Do not install sealants when the temperature is less than the manufacturer's recommended minimum temperature for installation and curing.

1.7 WARRANTY

A. Provide a manufacturer's warranty that provides correction of defective Work within a period of 5 years after beneficial occupancy.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Arch Amarlite

B. Kawneer

C. United States Aluminum

2.2 MATERIALS

A. Use extruded aluminum conforming to ASTM B221.

B. Use sheet aluminum conforming to ASTM B209.

[C. Use steel sections conforming to ASTM A36, shaped to suit mullion sections.]

D. Use stainless steel or galvanized steel fasteners.

E. Use sealants specified in Section 07900.

2.3 COMPONENTS

A. For exterior applications use frame material with 2 by 4 1/2 inch nominal dimensions; thermally broken, with interior tubular section insulated from exterior; flush glazing stops; drainage holes; internal weep drainage system.

B. For interior applications use frame material 1 3/4 by 4 inch nominal dimension; not thermally broken; flush glazing stops.

[C. For exterior applications of reinforced mullions use standard thermally broken frame with internal steel member reinforcement.]

D. Use doors 1 7/8 inch thick; 3 3/16 inch top rail; 3 1/2 inch vertical stiles; 7 1/2 inch bottom rail; square glazing stops.

E. Use flashings of aluminum with finish to match mullion sections.

2.4 HARDWARE

A. Use manufacturer's standard tubular shape pull that coordinates with exit device specified in Section 08710.

B. All other hardware is specified in Section 08710.

2.5 FABRICATION

A. Fabricate components with minimum clearance and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

B. Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.

C. Prepare components to receive anchor devices. Fabricate anchors.

D. Install fasteners and attachments to be concealed from view.

E. Prepare components with internal reinforcement for door hardware.

F. Reinforce framing members for imposed loads.

2.6 FINISHES

A. For exterior exposed aluminum surfaces use dark bronze anodize finish conforming to AA-M12-C22-A44, architectural Class l.

B. Use concealed steel items galvanized in accordance with ASTM A123 to 2.0 oz/sq ft.

C. Apply bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar surfaces.

D. Extent of finish

1. Apply factory finish to all surfaces exposed at completed assemblies.

2. Apply matching finishes to surfaces cut during fabrication, so that no natural aluminum is visible in completed assemblies, including joint edges.

3. Apply touchup materials recommended by finish manufacturer for field application to cut ends and minor damage to factory applied finish.

PART 3 EXECUTION

3.1 INSPECTION

A. Verify dimensions, tolerances, and methods of attachment with other Work.

B. Verify wall openings and adjoining air and vapor seal materials are ready to receive Work of this Section.

3.2 INSTALLATION

A. Install wall system in accordance with manufacturer's installation instructions and AAMA - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities,

C. Provide alignment attachments and shims to permanently fasten system to building structure.

D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances.

E. Provide thermal isolation where components penetrate or disrupt building insulation.

F. Install sill flashings. Turn up ends and edges, seal to adjacent Work to form water tight dam.

G. Coordinate attachment and seal of perimeter air and vapor barrier materials.

H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

I. Set thresholds in bed of mastic and secure.

J. Install hardware using templates provided.

K. Install glass in accordance with Section 08800, using glazing method required to achieve performance criteria.

L. Install perimeter sealant in accordance with Section 07900.

3.3 INSTALLATION TOLERANCES

A. Maximum variation from plumb is 1/16 inch per 10 feet.

B. Maximum misalignment of two adjoining members abutting in a plane is 1/32 inch.

3.4 ADJUSTING

A. Adjust operating hardware for smooth operation.

3.5 CLEANING

A. Remove protective material from frame members.

B. Wash surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean and dry.

3.6 PROTECTION OF FINISHED WORK

A. Protect finished work from damage.

END OF SECTION